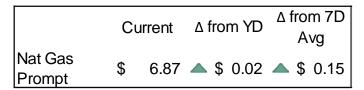


27 April 2022



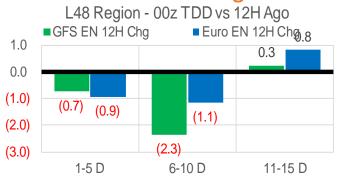
	Current	Δ from YD	Δ fror Αν	
WTI Prompt	\$ 101.67	\$ (0.03)	~ \$	(0.2)

	Curront	Δ from YD	∆ froi	m 7D
	Current		A۱	vg
Brent Prompt	¢ 104 07	\$ (0.02)	— ¢	(1 1)
Prompt	φ 104.9 <i>1</i>	Φ (0.02)	Ψ	(1.1)

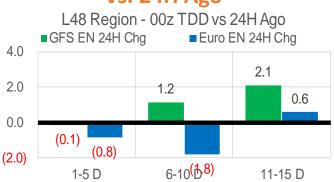
Page Menu

Short-term Weather Model Outlooks Lower 48 Component Models Regional S/D Models Storage Projection Weather Model Storage Projection Supply - Demand Trends Nat Gas Options Volume and Open Interest Nat Gas Futures Open Interest **Price Summary**

Vs. 12H Ago



Vs. 24H Ago



	Current	Δ from YD	Δ from 7D Avg
US Dry Production	93.9	▼ -0.88	▼ -2.60

Current	Δ from YD	Avg		Current	Δ from YD	Avg
93.9	-0.88	▼ -2.60	US Power Burns	27.2	▼ -1.37	0.40

	Current	Δ from YD	Δ from 7D Avg
US ResComm	22.0	1.41	4 .99

	Current	Δ from YD	Δ from 7D Avg
Canadian Imports	6.4	▼ -0.18	a 0.56

	Current	Δ from YD	Δ from 7D Avg
Net LNG Exports	12.8	0.31	0.68

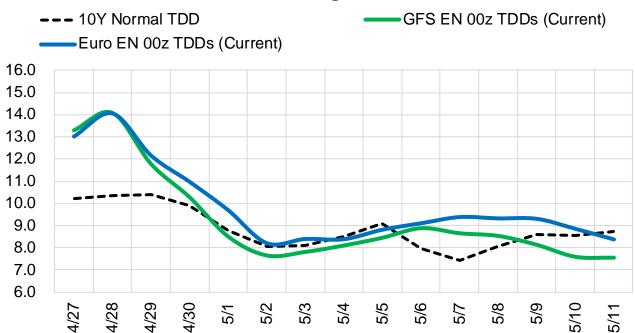
	Current	Δ from YD	Δ from 7D Avg
Mexican Exports	7.0	▼ -0.18	a 0.20

Λ from 7D

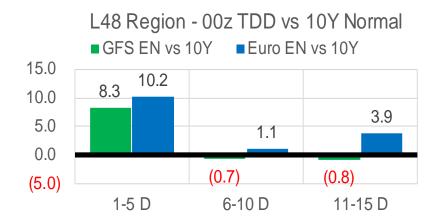


Short-term Weather Model Outlooks (00z)

L48 Region



Vs. 10Y Normal



Source: WSI, Bloomberg



Lower 48 Component Models

Daily Balances

	21-Apr	22-Apr	23-Apr	24-Apr	25-Apr	26-Apr	27-Apr	DoD	vs. 7D
Lower 48 Dry Production	97.5	97.0	97.4	95.8	96.4	94.7	93.9	▼-0.9	▼ -2.6
Canadian Imports	5.3	5.5	5.3	5.8	6.5	6.6	6.4	▼-0.2	0.6
L48 Power	27.2	25.2	24.8	25.8	28.4	28.5	27.2	▼-1.4	a 0.5
L48 Residential & Commercial	17.1	16.1	12.9	12.6	16.9	20.6	22.0	1.4	6.0
L48 Industrial	20.9	21.0	20.5	20.9	21.4	21.7	21.6	▼-0.1	a 0.5
L48 Lease and Plant Fuel	5.3	5.3	5.3	5.2	5.3	5.2	5.1	▼-0.1	- 0.2
L48 Pipeline Distribution	2.4	2.3	2.1	2.1	2.5	2.7	2.7	0.0	0.4
L48 Regional Gas Consumption	73.0	70.0	65.6	66.7	74.5	78.8	78.6	▼-0.2	7.2
Net LNG Delivered	11.98	11.92	12.53	11.81	11.94	12.52	12.83	0.3	0.7
Total Mexican Exports	6.9	6.8	6.4	6.3	7.1	7.2	7.0	▼-0.2	0.3
Implied Daily Storage Activity EIA Reported Daily Storage Activity Daily Model Error	11.1	13.8	18.1	16.8	9.4	2.8	1.8		

EIA Storage Week Balances

	18-Mar	25-Mar	1-Apr	8-Apr	15-Apr	22-Apr	WoW	vs. 4W
Lower 48 Dry Production	93.9	95.4	96.1	96.0	96.5	96.7	▲ 0.2	0.7
Canadian Imports	5.2	4.8	5.7	5.8	5.6	5.8	0.3	0.4
L48 Power	27.3	25.6	26.9	26.7	26.8	26.8	0.1	0.4
L48 Residential & Commercial	31.5	23.5	29.7	24.3	21.6	23.4	1.8	▼ -1.4
L48 Industrial	20.7	20.8	22.5	21.8	20.4	21.2	8.0	- 0.2
L48 Lease and Plant Fuel	5.1	5.2	5.2	5.2	5.3	5.3	0.0	0.0
L48 Pipeline Distribution	3.1	2.6	2.9	2.8	2.7	2.8	0.1	0.0
L48 Regional Gas Consumption	87.7	77.5	87.3	80.9	76.7	79.5	2.8	▼-1.1
Net LNG Exports	12.9	13.0	13.1	12.4	12.5	12.1	▼ -0.3	▼-0.6
Total Mexican Exports	6.6	6.5	6.4	6.8	6.6	6.7	▲ 0.1	0.1
Implied Daily Storage Activity	-7.9	3.2	-5.0	1.7	6.4	4.3	-2.1	
EIA Reported Daily Storage Activity	-7.3	3.7	-4.7	2.1	7.6			
Daily Model Error	-0.7	-0.5	-0.3	-0.4	-1.2			

Monthly Balances									
•	2Yr Ago	LY					MTD		
	Apr-20	Apr-21	Dec-21	Jan-22	Feb-22	Mar-22	Apr-22	MoM	vs. LY
Lower 48 Dry Production	92.7	92.5	96.1	93.6	93.6	95.1	96.4	1.3	3.9
Canadian Imports	4.0	4.7	4.8	6.7	6.6	5.2	5.8	0.5	1.1
L48 Power	25.6	25.0	28.7	31.4	29.0	26.9	26.7	- 0.2	1.7
L48 Residential & Commercial	20.5	19.6	33.9	48.6	42.7	29.6	21.7	7 -7.9	2.1
L48 Industrial	20.4	21.4	22.5	25.5	25.3	21.7	21.2	▼-0.5	▼ -0.2
L48 Lease and Plant Fuel	5.0	5.0	5.3	5.1	5.1	5.2	5.3	0.1	0.2
L48 Pipeline Distribution	2.4	2.5	3.2	3.8	3.4	2.9	2.7	▼-0.3	0.2
L48 Regional Gas Consumption	74.0	73.5	93.6	114.4	105.5	86.3	77.5	▼-8.8	4.0
Net LNG Exports	8.2	11.5	12.1	12.4	12.4	12.9	12.3	▼-0.6	▲ 0.8
Total Mexican Exports	4.8	6.7	6.2	6.3	6.2	6.5	6.7	0.2	▼ 0.0
Implied Daily Storage Activity EIA Reported Daily Storage Activity Daily Model Error	9.7	5.5	-11.0	-32.8	-23.8	-5.4	5.7		



Daily Average Generation Data

Nuclear Generation Daily Average - GWh (NRC)

	19-Apr	20-Apr	21-Apr	22-Apr	23-Apr	24-Apr	25-Apr	DoD	vs. 7D
NRC Nuclear Daily Output	72.2	72.8	73.1	73.3	71.8	72.8	73.7	0.9	1.1
NRC Nuclear Max Capacity	104.9	104.9	104.9	104.9	104.9	104.9	104.9	0.0	0.0
NRC Nuclear Outage	32.7	32.1	31.8	31.5	33.0	32.1	31.2	-0.9	-1.1
NRC % Nuclear Cap Utilization	73.4	74.0	74.3	74.6	73.0	74.0	75.0	1.0	1.1

Wind Generation Daily Average - MWh (EIA)

	19-Apr	20-Apr	21-Apr	22-Apr	23-Apr	24-Apr	25-Apr	DoD	vs. 7D
CALI Wind	4230	3822	3521	4097	2605	1464	1249	-216	-2041
TEXAS Wind	20931	18570	20882	23539	21762	16752	17138	386	-3268
US Wind	72785	67563	65112	78521	79445	64414	57892	-6522	-13415

Generation Daily Average - MWh (EIA)

	19-Apr	20-Apr	21-Apr	22-Apr	23-Apr	24-Apr	25-Apr	DoD	vs. 7D
US Wind	72785	67563	65112	78521	79445	64414	57892	-6522	-13415
US Solar	14218	16727	15162	13803	15986	17180	16430	-750	918
US Petroleum	1000	1022	1006	960	943	990	1028	38	41
US Other	7596	7386	7495	7330	7445	7643	7590	-53	108
US Coal	78688	76825	79747	75605	69801	71588	77008	5420	1632
US Nuke	76561	76944	77186	77313	75973	76659	77686	1027	914
US Hydro	27906	28094	26177	25921	23897	24005	26266	2262	266
US Gas	133197	135884	135448	126910	111831	119100	142084	22984	15022

See National Wind and Nuclear daily charts

-8%

-0.1



Storage Week Average Generation Data

								WoW
	18-Mar	25-Mar	1-Apr	8-Apr	15-Apr	22-Apr	WoW	Bcf/d Impact
NRC Nuclear Daily Output	80.9	80.9	79.3	75.0	71.9	72.3	0.4	-0.1
NRC Nuclear Max Capacity	104.9	104.9	104.9	104.9	104.9	104.9	0.0	
NRC Nuclear Outage	23.9	24.0	25.5	29.9	32.9	32.6	-0.4	
NRC % Nuclear Cap Utilization	82.3	82.3	80.7	76.3	73.2	73.5	0.4	
Wind Generation Weekly Av	verage - MW	h (EIA)						
	18-Mar	25-Mar	1-Apr	8-Apr	15-Apr	22-Apr	WoW	WoW Bcf/d Impact
CALI Wind	2297	2037	2643	2611	3434	3613	179	0.0
TEXAS Wind	17742	16108	14530	14468	16530	15612	-918	0.2
US Wind	63171	62107	61695	60009	66367	61075	-5293	1.0

Generation Weekly Average - MWh (EIA)

Nuclear Generation Weekly Average - GWh (NRC)

						CSI.		
	18-Mar	25-Mar	1-Apr	8-Apr	15-Apr	22-Apr	WoW	WoW Bcf/d Impact
US Wind	63171	62107	61695	60009	66367	61075	-5293	1.0
US Solar	13919	13805	15451	15518	16118	15488	-630	0.1
US Petroleum	961	864	1048	1015	964	984	19	0.0
US Other	7120	7745	7481	7183	7154	7448	294	-0.1
US Coal	86035	72503	77743	77514	77087	78044	957	-0.2
US Nuke	84775	84027	83506	78807	75674	76478	804	-0.1
US Hydro	34883	33229	33463	32524	29415	27302	-2113	0.4
US Gas	137079	124817	134886	134633	134338	132715	-1623	-0.3

See National Wind and Nuclear daily charts

-8.3

-2.2



NRC % Nuclear Cap Utilization

Market Report

77.1

79.8

Monthly Average Generation Data

Nuclear Generation Monthly A	Nuclear Generation Monthly Average - GWh (NRC)									
	2Yr Ago	LY				MTD				
	Same 30 days	Same 30 days	Jan-22	Feb-22	Mar-22	Apr-22	Last 30 days	MoM (MTD vs LY)	Last 30 days YoY	
NRC Nuclear Daily Output	78.5	75.8	90.2	87.6	81.3	73.2	73.7	-8.2	-2.1	
NRC Nuclear Max Capacity	104.9	104.9	104.9	104.9	104.9	104.9	104.9	0.0	0.0	
NRC Nuclear Outage	26.4	29.0	14.7	17.3	23.6	31.7	31.2	8.2	2.1	

89.0

82.7

74.4

75.0

91.7

Wind Generation Monthly Average - MWh (EIA)

	2Yr Ago	ĹY				MTD			
	Same 30 days	Same 30 days	Jan-22	Feb-22	Mar-22	Apr-22	Last 30 days	MoM (MTD vs LY)	Last 30 days YoY
CALI Wind	2345	3091	1244	1559	2250	2945	3009	695	-82
TEXAS Wind	9987	12872	11355	12294	14837	16287	16222	1450	3351
US Wind	40101	52973	51045	56539	58520	63267	64066	4747	11093

Generation Monthly Average - MWh (EIA)

Concration months, 700 ago	2Yr Ago	LY				MTD			
	Same 30 days	Same 30 days	Jan-22	Feb-22	Mar-22	Apr-22	Last 30 days	MoM (MTD vs LY)	Last 30 days YoY
US Wind	40101	52973	51045	56539	58520	63267	64066	~ 799.2	11093
US Solar	9389	13079	9541	12188	14053	15783	15595	▼ -188.0	2515
US Petroleum	2873	2642	5021	3451	1335	989	1002	1 3	▼ -1640
US Other	7496	7229	8792	8839	7187	7322	7326	4	97
US Coal	56451	74793	117971	106588	82291	76909	76882	▼ -27	2089
US Nuke	82455	79612	95259	92280	85157	77027	77619	592	▼ -1993
US Hydro	30908	29014	34040	32213	33927	28789	29308	519	293
US Gas	137785	131258	164024	152058	135583	133181	133683	1713	2425
US Total	365802	390424	485878	464684	419867	405772	407853	2626	17429



See National Wind and Nuclear daily charts



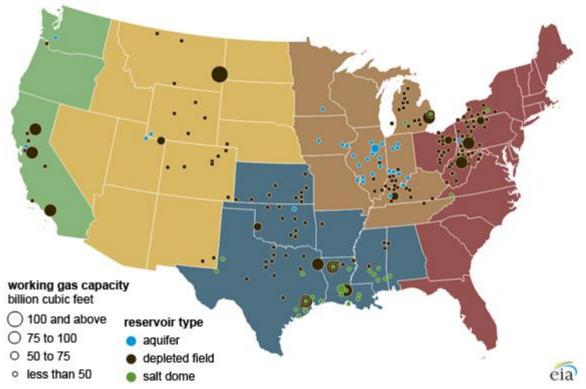
Regional S/D Models Storage Projection

Week Ending 22-Apr

	Daily Raw Storage	Daily Adjustment Factor	Daily Average Storage Activity (Adjusted) *	Weekly Adjusted Storage Activity
L48	4.8	0.3	5.0	35
East	-1.7	1.6	-0.1	-1
Midwest	1.2	-0.6	0.6	4
Mountain	3.6	-3.5	0.1	1
South Central	1.9	2.4	4.3	30
Pacific	-0.2	0.3	0.2	1

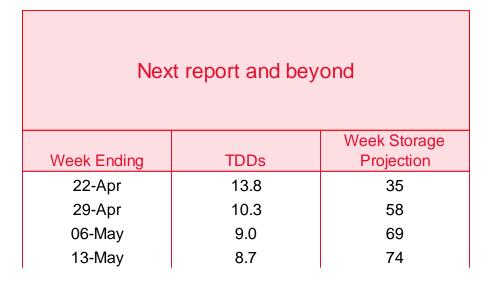
^{*}Adjustment Factor is calcuated based on historical regional deltas

U.S. underground natural gas storage facilities by type (July 2015)

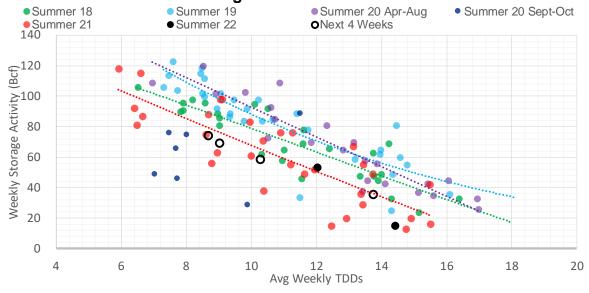




Weather Model Storage Projection



Weather Storage Model - Next 4 Week Forecast



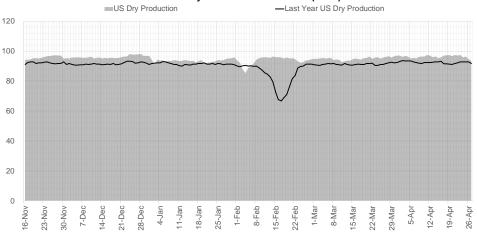
Go to larger image



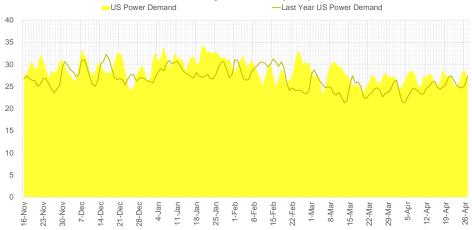


Supply - Demand Trends

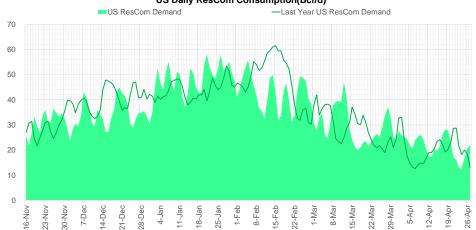
US Dry Natural Gas Production (Bcf/d)



US Daily Power Burns (Bcf/d)



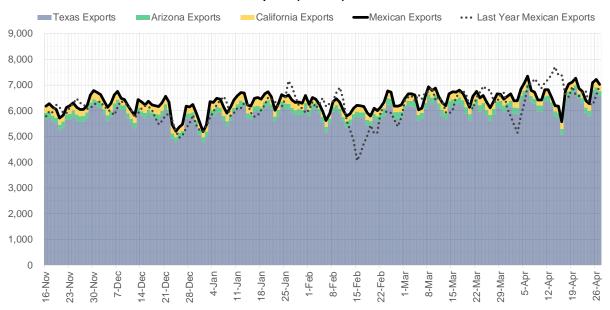
US Daily ResCom Consumption(Bcf/d)



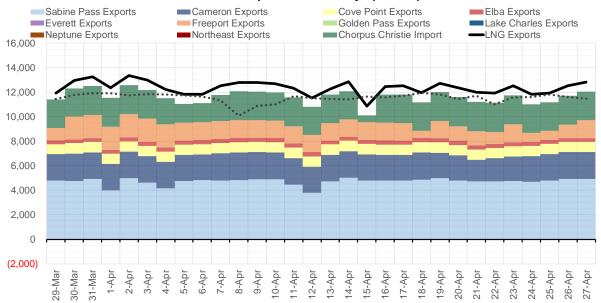
Source: Bloomberg



Mexican Exports (MMcf/d)







Source: Bloomberg



Nat Gas Options Volume and Open Interest CME and ICE Combined

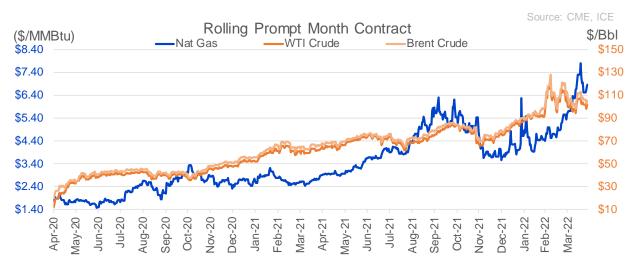
CONTRACT MONTH	CONTRACT YEAR	PUT/CALL	STRIKE	CUMULATIVE VOL	CONTRACT MONTH	CONTRACT YEAR	PUT/CALL	STRIKE	CUMULATIVE OI
								40.00	50704
6	2022	С	8.50	6663	8 8	2022 2022	C C	10.00	50794 44029
6	2022	P	6.25	5570				10.50	
7	2022	С	8.00	4988	10	2022	С	6.00	34944
6	2022	C	9.00	4343	5	2022	P	4.00	25938
8	2022	С	10.00	4337	6	2022	С	6.00	25599
6	2022	Р	5.50	4291	10	2022	С	5.00	25550
8	2022	С	10.50	3501	9	2022	С	6.00	23730
6	2022	Р	6.00	3315	7	2022	С	8.00	23630
10	2022	С	7.00	2577	5	2022	P	3.00	22811
6	2022	С	8.00	2343	10	2022	P	3.00	21267
8	2022	Р	5.00	2167	5	2022	С	5.00	21231
6	2022	С	7.00	2058	5	2022	C	6.00	20894
7	2022	С	8.50	1927	6	2022	P -	4.00	20132
6	2022	С	8.25	1891	5	2022	Р	2.50	19874
7	2022	С	7.00	1812	8	2022	С	6.00	19705
5	2022	С	7.00	1811	6	2022	С	7.00	19379
2	2023	C	21.00	1750	5	2022	С	8.00	18856
2	2023	Ċ	22.00	1750	12	2022	С	5.00	18421
6	2022	Č	7.75	1741	7	2022	С	6.00	18289
6	2022	Č	12.00	1724	10	2022	Р	3.50	18141
6	2022	Č	7.50	1682	9	2022	С	10.00	18128
8	2022	P	6.00	1676	5	2022	С	7.00	18067
7	2022	P	6.50	1620	8	2022	С	7.00	18047
6	2022	C	10.00	1563	9	2022	С	7.00	17920
5	2022	P	6.80		6	2022	С	5.00	17862
		P P		1553	7	2022	Р	3.25	17645
12	2022		5.50	1450	5	2022	Р	2.75	17585
8	2022	С	6.00	1382	10	2022	Р	2.50	17436
8	2022	P	4.50	1334	5	2022	Р	3.50	17295
11	2022	С	9.00	1300	7	2022	С	7.00	17267
6	2022	Р	5.00	1254	6	2022	Р	3.00	17223
12	2022	Р	7.00	1250	5	2022	Р	4.50	17044
7	2022	Р	5.00	1176	6	2022	С	10.00	16936
9	2022	С	9.50	1112	7	2022	С	10.00	16885
9	2022	С	7.50	1100	5	2022	P	3.75	16402
7	2022	С	10.00	1016	5	2022	Р	5.00	16381
9	2022	С	8.50	1016	10	2022	Р	4.00	16375
4	2023	С	6.00	1015	6	2022	Р	3.50	16077
5	2023	С	6.00	1015	6	2022	P	4.75	15939
6	2023	С	6.00	1015	1	2023	C	10.00	15499
7	2023	С	6.00	1015	2	2023	Ċ	10.00	15394
8	2023	С	6.00	1015	9	2022	P	2.50	15291
9	2023	C	6.00	1015	6	2022	P	5.50	15005
10	2023	C	6.00	1015	7	2022	P	3.50	14935
7	2022	P	7.00	1001	9	2022	P	2.75	14933
9	2022	Р	6.50	1000	5	2022	C	9.00	14854
3	2023	, P	4.00	1000	10	2022	P	2.00	14764
4	2023	, P	4.00	1000	7	2022	P	3.00	14500
4	2023	C	8.00	990	10	2022	C	7.00	14453
10	2023	P	5.00	902	8	2022			14350
10	2022	I ^z	5.00	302	0	2022	Source	: CME, ICE	14330



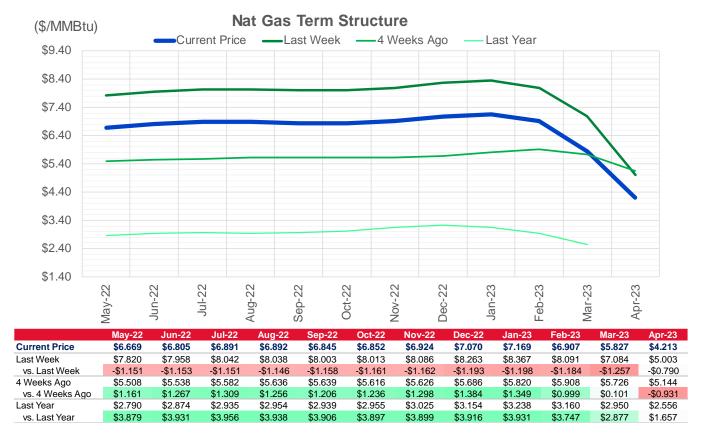
Nat Gas Futures Open Interest

CME and ICE Combined

CME Henry	Hub Futures (10		J)		Hub Futures Conf	tract Equiva	alent (10,000 MM
	Current	Prior	Daily Change		Current	Prior	Daily Change
MAY 22	1676	14633	-12957	MAY 22	80298	77980	2318
JUN 22	132124	134033	-1909	JUN 22	77540	74016	3525
JUL 22	162633	163511	-878	JUL 22	76570	75323	1247
AUG 22	58264	57233	1031	AUG 22	61425	61971	-547
SEP 22	85411	82945	2466	SEP 22	66461	66409	53
OCT 22	92775	93571	-796	OCT 22	75124	75200	-76
NOV 22	45167	44905	262	NOV 22	57852	57380	472
DEC 22	46469	47145	-676	DEC 22	61353	61860	-507
JAN 23	61534	61175	359	JAN 23	63136	62793	343
FEB 23	23281	23831	-550	FEB 23	51072	50002	1069
MAR 23	38597	38907	-310	MAR 23	53074	52588	486
APR 23	55864	56403	-539	APR 23	51411	51651	-240
MAY 23	57871	57486	385	MAY 23	47455	47481	-26
JUN 23	22589	22788	-199	JUN 23	43225	43206	20
JUL 23	18859	18870	-11	JUL 23	42704	42760	-56
AUG 23	14003	14125	-122	AUG 23	42481	42526	-46
SEP 23	18047	18095	-48	SEP 23	42260	42205	55
OCT 23	33225	33045	180	OCT 23	48802	48570	232
NOV 23	12457	12521	-64	NOV 23	42482	42335	147
DEC 23	14031	14995	-964	DEC 23	38550	38501	49
JAN 24	21647	22525	-878	JAN 24	37634	37434	201
FEB 24	5543	5435	108	FEB 24	25228	25156	73
MAR 24	14555	14664	-109	MAR 24	30036	29871	165
APR 24	11228	11164	64	APR 24	24273	24235	38
MAY 24	6174	6134	40	MAY 24	25058	24246	813
JUN 24	1856	1831	25	JUN 24	21251	21344	-93
JUL 24	1935	1910	25	JUL 24	21655	21605	50
AUG 24	3137	3111	26	AUG 24	22622	22572	50
SEP 24	1422	1420	2	SEP 24	21055	21075	-20
OCT 24	6831	6996	-165	OCT 24	22986	22985	1







		Cash	Prompt	Cash to
	Units	Settled	Settle	Prompt
AGT Citygate	\$/MMBtu	5.94	6.75	0.81
TETCO M3	\$/MMBtu	6.66	6.57	-0.09
FGT Zone 3	\$/MMBtu	6.80	7.27	0.47
Zone 6 NY	\$/MMBtu	6.80	6.53	-0.27
Chicago Citygate	\$/MMBtu	6.87	6.99	0.12
Michcon	\$/MMBtu	6.84	7.00	0.16
Columbia TCO Pool	\$/MMBtu	6.50	6.61	0.11
Ventura	\$/MMBtu	6.88	6.92	0.04
Rockies/Opal	\$/MMBtu	7.01	6.71	-0.30
El Paso Permian Basin	\$/MMBtu	6.52	6.25	-0.27
Socal Citygate	\$/MMBtu	7.41	6.82	-0.59
Malin	\$/MMBtu	6.86	6.78	-0.08
Houston Ship Channel	\$/MMBtu	6.70	7.08	0.38
Henry Hub Cash	\$/MMBtu	6.41	6.93	0.52
AECO Cash	C\$/GJ	5.74	5.47	-0.27
Station2 Cash	C\$/GJ	5.72	6.54	0.82
Dawn Cash	C\$/GJ	6.82	7.06	0.24

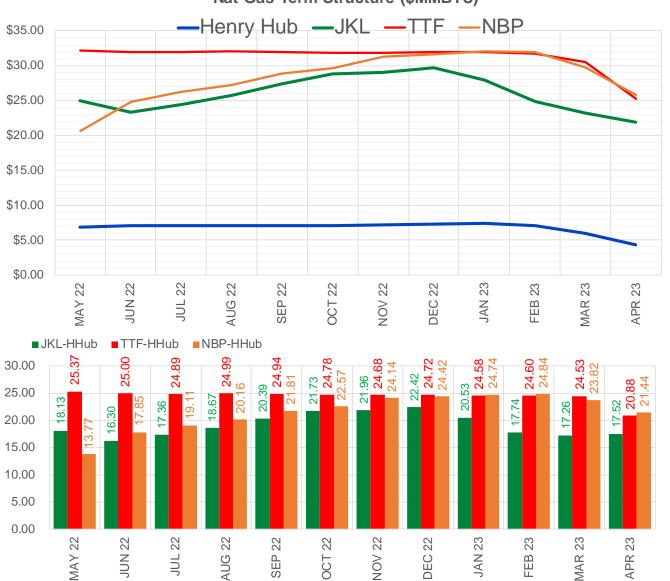
Source: CME, Bloomberg



			_			4 10/00/00	_	
					VS	s. 4 Weeks		
	Units	Current Price	VS.	Last Week		Ago	VS	. Last Year
NatGas Jul21/Oct21	\$/MMBtu	2.224		0.000		0.000		2.212
NatGas Oct21/Nov21	\$/MMBtu	0.361		0.000		0.000		0.299
NatGas Oct21/Jan22	\$/MMBtu	-1.817		0.000		0.000	•	-2.083
NatGas Apr22/Oct22	\$/MMBtu	1.693		-0.274		1.594		1.671
WTI Crude	\$/Bbl	101.70		-0.860		-2.540		38.760
Brent Crude	\$/Bbl	104.99		-2.260		-5.240		38.570
Fuel Oil, NY Harbour 1%	\$/Bbl	97.18		0.000		0.000		0.000
Heating Oil	cents/Gallon	446.79		60.600		75.180		256.220
Propane, Mt. Bel	cents/Gallon	1.31		-0.013		-0.130		0.493
Ethane, Mt. Bel	cents/Gallon	0.50		-0.002		0.077		0.267
Coal, PRB	\$/MTon	12.30		0.000		0.000		0.000
Coal, PRB	\$/MMBtu	0.70						
Coal, ILB	\$/MTon	31.05		0.000		0.000		0.000
Coal, ILB	\$/MMBtu	1.32						



Nat Gas Term Structure (\$MMBTU)



	MAY 22	JUN 22	JUL 22	AUG 22	SEP 22	OCT 22	NOV 22	DEC 22	JAN 23	FEB 23	MAR 23	APR 23
Henry Hub	\$6.870	\$7.012	\$7.104	\$7.095	\$7.054	\$7.071	\$7.129	\$7.273	\$7.389	\$7.113	\$5.976	\$4.368
JKL	\$24.995	\$23.310	\$24.465	\$25.765	\$27.440	\$28.800	\$29.090	\$29.690	\$27.920	\$24.855	\$23.235	\$21.885
JKL-HHub	\$18.125	\$16.298	\$17.361	\$18.670	\$20.386	\$21.729	\$21.961	\$22.417	\$20.531	\$17.742	\$17.259	\$17.517
TTF	\$32.242	\$32.012	\$31.995	\$32.084	\$31.998	\$31.852	\$31.806	\$31.989	\$31.965	\$31.711	\$30.509	\$25.245
TTF-HHub	\$25.372	\$25.000	\$24.891	\$24.989	\$24.944	\$24.781	\$24.677	\$24.716	\$24.576	\$24.598	\$24.533	\$20.877
NBP	\$20.638	\$24.864	\$26.212	\$27.255	\$28.863	\$29.638	\$31.268	\$31.693	\$32.124	\$31.952	\$29.797	\$25.809
NBP-HHub	\$13.768	\$17.852	\$19.108	\$20.160	\$21.809	\$22.567	\$24.139	\$24.420	\$24.735	\$24.839	\$23.821	\$21.441



27 April 2022

